

WHAT IS CLAIMED IS:

1. An abnormality detecting apparatus for detecting abnormality in a fuel evaporative emission control system, comprising:

sensor means for detecting operation states of an internal combustion engine;

a canister disposed at an intermediate location of a purge passage communicating a fuel tank providing fuel to the internal combustion engine and an air intake pipe of the internal combustion engine with each other, for adsorbing fuel gas generated in the fuel tank;

an atmospheric air port provided to the canister and opened to an atmosphere side;

a purge valve disposed at an intermediate position between the canister and the air intake pipe; and

fuel evaporative emission control means for preventing the evaporative emission of the fuel by controlling opening/closing of the purge valve depending on the operation state of the internal combustion engine, and introducing fuel gas adsorbed by the canister into the air intake pipe as occasion requires,

wherein the sensor means includes:

one of intake air amount detecting means for detecting an intake air amount as a load state of the internal combustion engine, and intake air pipe pressure detecting means for detecting an intake air pressure and atmospheric pressure detecting means for detecting an atmospheric pressure;

at least one of outside air temperature detecting means for detecting an

outside air temperature, fuel temperature detecting means for detecting a fuel temperature inside the fuel tank, and tank internal temperature detecting means for detecting a gas temperature inside the fuel tank; and

fuel tank pressure detecting means for detecting a pressure within the fuel tank as a fuel tank pressure,

wherein the fuel evaporative emission controlling means includes:

atmospheric air port closing means for closing the atmospheric air port;

hermetically closing means for hermetically closing both the purge control valve and the atmospheric air port to thereby put the overall fuel evaporative emission control system in a hermitically sealed state;

abnormality decision enabling condition detecting means for detecting validity of an abnormality decision enabling condition of the fuel evaporative emission control system, based on the operation state of the internal combustion engine;

purge rate adjusting means for regulating a purge rate by controlling an opening degree of the purge control valve depending on the air intake pipe pressure when the abnormality decision enabling condition is valid; and

abnormality detecting means for detecting abnormality of the fuel evaporative emission control system, based on the fuel tank pressure at the time when the abnormality decision enabling condition is valid,

wherein the abnormality decision enabling condition detecting means includes condition validation limiting means for prohibiting the abnormality decision, in dependence on at least one of the fuel temperature, the tank internal temperature, and the outside air temperature.

2. An abnormality detecting apparatus for a fuel evaporative emission control system according to claim 1, wherein the condition validation limitation means prohibits an abnormal determination in a case where at least one of the fuel temperature, the tank internal temperature, and the outside air temperature detection means is changed by a value equal to or greater than a predetermined value.

3. An abnormality detecting apparatus for a fuel evaporative emission control system according to claim 1, wherein the condition validation limiting means individually sets a plurality of prohibition condition decision values corresponding to a plurality of abnormal states predicted based on the fuel tank pressure, and switches the plurality of prohibition condition decision values in dependence on the plurality of abnormal states.

4. An abnormality detecting apparatus for a fuel evaporative emission control system according to claim 1, wherein the condition validation limitation means sets the prohibition condition decision value for each fuel tank pressure measuring process, according to the predicted plurality of abnormal states.

5. An abnormality detecting apparatus for a fuel evaporative emission control system according to claim 1, wherein the condition validation limitation means compensates the prohibition condition decision value of at least one of the fuel temperature, the outside air temperature and the tank internal temperature detection means, in accordance with atmospheric pressure, to prohibit an abnormal determination.